

APRIL/MAY 2024

**23UECA22B — RESOURCE MANAGEMENT  
TECHNIQUES**

Time : Three hours

Maximum : 75 marks

**SECTION A — (10 × 2 = 20 marks)**

**Answer ALL questions.**

1. Define feasible solution.
2. What are the different types of Linear Programming?
3. Define Degeneracy.
4. Give the main objective of Least Cost method.
5. List out the objectives of the assignment problem.
6. What is an unbalanced assignment problem?
7. Define PERT.

- (b) The following details are available regarding a project :

Activity Predecessor Activity Duration (Weeks)

A	-	3
B	A	5
C	A	7
D	B	10
E	C	5
F	D, E	4

Determine the critical path, the critical activities and the project completion time.

15. (a) Find the optimal plan for both the player.

		Player - B			
		I	II	III	IV
I		-2	0	0	5
Player - A		II	4	2	1
		III	-4	-3	0
		IV	5	3	-4
Or					

- (b) Find the range of values of p and q which will render the entry (2, 2) a saddle point for the game.

		Player B		
		B <sub>1</sub>	B <sub>2</sub>	B <sub>3</sub>
	Player A	A <sub>1</sub>	2	4
		A <sub>2</sub>	10	7
		A <sub>3</sub>	4	p
				6

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Use the simplex method to solve the (LP) model:

$$\text{Max } Z = 5x_1 + 4x_2$$

Subject to

$$6x_1 + 4x_2 \leq 24$$

$$x_1 + 2x_2 \leq 6$$

$$-x_1 + x_2 \leq 1$$

$$x_2 \leq 2$$

$$x_1, x_2 \geq 0$$